CLAIMS

What is claimed is:

1. A method, comprising:

storing one or more of a plurality of color components of an image in a planar format; and

storing two or more of the plurality of color components of the image in a packed format, such that the plurality of color components are stored in a mixed format of planar format and packed format during memory management of the image.

2. The method of claim 1,

wherein the storing the one or more of the plurality of color components of the image in the in the planar format further comprises:

storing luminance components (Y) of the image in a planar array, and

wherein the storing the two or more of the plurality of color components of the image in the packed format further comprises:

storing chrominance components (UV) of the image in a packed array.

3. The method of claim 1, wherein the plurality of color components are presented in a color space as one of a YUV color space, a YCrCb color space, a YIQ color space, and an RGB color space.

4. The method of claim 1, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

5. A method, comprising:

receiving an image consisting of a plurality of color components, wherein the plurality of color components are received in a format as one of planar format and packed format; and

converting the plurality of color components into a mixed format of planar format and packed format, such that one or more of the plurality of color components are stored in a planar format and two or more of the plurality of color components are stored in a packed format.

6. The method of claim 5, wherein the plurality of color components are presented in a color space as one of a YUV color space, a YCrCb color space, a YIQ color space, and an RGB color space.

7. The method of claim 5, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

8. A method comprising:

converting a plurality of color components of an image in a mixed format of planar format and packed format into a planar format; and

dispatching an image consisting of a plurality of color components in the planar format.

9. The method of claim 8, wherein the converting color components in the mixed format into the planar format comprises:

performing a memory copy of the luminance components (Y) within the planar array to a Y-plane of YUV planar arrays; and

accessing the chominance components (UV) within the packed array; and

performing alternate write-out coping of the UV components into respective planes of the YUV planar arrays.

10. The method of claim 8, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

11. A method comprising:

converting a plurality of color components of an image in a mixed format of planar format and packed format into a packed format; and

dispatching an image consisting of a plurality of color components in the packed format.

12. The method of claim 11, wherein the converting color components in the mixed format into the packed format comprises:

accessing the luminance components (Y) within the planar array;

accessing the chominance components (UV) within the packed array; and

performing an interleaving write-out of Y components and UV components to a YUV packed array.

13. The method of claim 11, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

14. A computer-readable medium having stored thereon a set of instructions, the set of instruction, which when executed by a processor, cause the processor to perform a method comprising:

receiving an image consisting of a plurality of color components, wherein the plurality of color components are received in a format as one of planar format and packed format; and

converting the plurality of color components into a mixed format of planar format and packed format, such that one or more of the plurality of color components are stored in a planar format and two or more of the plurality of color components are stored in a packed format.

15. The computer-readable medium of claim 14, wherein the plurality of color components are presented in a color space as one of a YUV color space, a YCrCb color space, a YIQ color space, and an RGB color space.

16. The computer-readable medium of claim 14, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

17. A computer-readable medium having stored thereon a set of instructions, the set of instruction, which when executed by a processor, cause the processor to perform a method comprising:

converting the plurality of color components in the mixed format into a planar format; and

dispatching an image consisting of a plurality of color components in the planar format.

18. The computer-readable medium of claim 17, wherein converting color components in the mixed format into the planar format comprises:

performing a memory copy of the luminance components (Y) within the planar area to a Y-plane of YUV planar arrays; and

performing alternate read/write-out coping of the UV components into respective planes of the YUV planar arrays.

19. The computer-readable medium of claim 17, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

20. A computer-readable medium having stored thereon a set of instructions, the set of instruction, which when executed by a processor, cause the processor to perform a method comprising

converting a plurality of color components of an image in a mixed format of planar format and packed format into a packed format; and

dispatching an image consisting of a plurality of color components in the packed format.

21. The computer-readable medium of claim 17, wherein the converting color components in the mixed format into the packed format comprises:

accessing the luminance components (Y) within the planar array;

accessing the chominance components (UV) within the packed array; and

performing an interleaving write-out of Y components and UV components to a YUV packed array.

22. The computer-readable medium of claim 20, wherein at least one of the plurality of color components of the image are sub-sampled in a dimension of another color component of the image as one of a 4:2:0 space, a 4:2:2 space, and a 4:1:1 space.

23. A method comprising:

receiving a quantized block of an image;

performing inverse quantization on the quantized block to generate a frequency spectrum for the quantized block;

performing inverse discrete cosine transformation of the quantized block using the frequency spectrum to generate a decoded block;

repeating the receiving, decoding, performing and performing for a plurality of encoded blocks, such that a plurality of decoded blocks are formed;

motion compensating the plurality of blocks as a group thereby generating a plurality of motion compensated (MC) blocks and;

repeating the receiving, decoding, performing, performing, repeating and motion compensating for each quanitized block of the image.

24. The method of claim 23, where the motion compensating of the plurality of blocks further comprises:

using as the plurality of blocks four blocks, such that four MC blocks are generated as the plurality of MC blocks; and

writing pixel data of the four MC blocks as a group and in a sequential manner to a frame buffer, such that prior to being burst written to the frame buffer, the pixel data is temporarily held in an entry of a write-combining (WC) buffer, thereby eliminating partial writes from the WC buffer.

25. The method of claim 23, wherein the decoded blocks are represented in a YUV color space, planar storage format and the motion compensating further comprises:

storing luminance components (Y) of the decoded blocks in a planar array; and

storing chrominance components (UV) of the decoded blocks in a packed array, such that the decoded blocks are converted into a mixed storage format of planar format and packed format.

26. A computer-readable medium having stored thereon a set of instructions, the set of instruction, which when executed by a processor, cause the processor to perform a method comprising:

receiving a quantized block of an image;

performing inverse quantization on the quantized block to generate a frequency spectrum for the quantized block;

performing inverse discrete cosine transformation of the quantized block using the frequency spectrum to generate a decoded block;

repeating the receiving, decoding, performing and performing for a plurality of encoded blocks, such that a plurality of decoded blocks are formed;

motion compensating the plurality of blocks as a group thereby generating a plurality of motion compensated (MC) blocks and;

repeating the receiving, decoding, performing, performing, repeating and motion compensating for each quanitized block of the image.

27. The computer-readable medium of claim 18, where the motion compensating of the plurality of blocks further comprises:

using as the plurality of blocks four blocks, such that four MC blocks are generated as the plurality of MC blocks; and

writing pixel data of the four MC blocks as a group and in a sequential manner to a frame buffer, such that prior to being burst written to the frame buffer, the pixel data is temporarily held in an entry of a write-combining (WC) buffer, thereby eliminating partial writes from the WC buffer.

28. The computer-readable medium of claim 26, wherein the decoded blocks are represented in a YUV color space, planar storage format and the motion compensating further comprises:

storing luminance components (Y) of the decoded blocks in a planar array; and

storing chrominance components (UV) of the decoded blocks in a packed array, such that the decoded blocks are converted into a mixed storage format of planar format and packed format.

29. A method, comprising:

receiving a block of a color components of an image in a mixed format of a packed format and a planar format;

converting the block of color components in the mixed format into a format as one of the packed format and the planar format;

repeating the receiving and the converting for a plurality of blocks of color components;

storing the plurality of blocks of color components in a format as of the planar format and the packed format; and

repeating the receiving, the converting and the storing for each block of color components of the image.

30. The method of claim 29, further comprises:

using as the plurality of blocks of color components four blocks of color components; and

writing pixel data of the four blocks as a group and in a sequential manner to a frame buffer, such that prior to being burst written to the frame buffer, the pixel data is temporarily held in an entry of a write-combining (WC) buffer, thereby eliminating partial writes from the WC buffer.

31. The method of claim 29,

wherein the block of color components is converted into the planar format, and

wherein the plurality of blocks of color components are stored in the planar format.

32. The method of claim 29,

wherein the block of color components is converted into the packed format, and

wherein the blocks of color component are stored in the packed format.

33. A computer-readable medium having stored thereon a set of instructions, the set of instruction, which when executed by a processor, cause the processor to perform a method comprising:

receiving a block of a color components of an image in a mixed format of a packed format and a planar format;

converting the block of color components in the mixed format into a format as one of the packed format and the planar format;

repeating the receiving and the converting for a plurality of blocks of color components;

storing the plurality of blocks of color components in a format as of the planar format and the packed format; and

repeating the receiving, the converting and the storing for each block of color components of the image.

34. The computer-readable medium of claim 33, further comprises:

using as the plurality of blocks of color components four blocks of color components; and

writing pixel data of the four blocks as a group and in a sequential manner to a frame buffer, such that prior to being burst written to the frame buffer, the pixel data is temporarily held in an entry of a write-combining (WC) buffer, thereby eliminating partial writes from the WC buffer.

35. The computer-readable medium of claim 33,

wherein the block of color components is converted into the planar format, and

wherein the plurality of blocks of color components are stored in the planar format.

36. The computer-readable medium of claim 33,

wherein the block of color components is converted into the packed format, and

wherein the blocks of color component are stored in the packed format.

37. A method, comprising:

receiving a block of a color components of an image in a format as one of a packed format and a planar format;

converting the block of color components into a mixed format of the packed format and the planar format;

repeating the receiving and the converting for a plurality of blocks of color components;

storing the plurality of blocks of color components in the mixed format of the packed format and the planar format, such that one or more color components of the plurality of block are stored in a planar format and two or more of the color components of the plurality of block are stored in a packed format; and

repeating the receiving, the converting and the storing for each block of color components of the image.

38. The method of claim 37, further comprises:

using as the plurality of blocks of color components four blocks of color components; and

writing pixel data of the four blocks as a group and in a sequential manner to a frame buffer, such that prior to being burst written to the frame buffer, the pixel data is temporarily held in an entry of a write-combining (WC) buffer, thereby eliminating partial writes from the WC buffer.

39. The method of claim 37,

wherein the block of color components is converted into the planar format, and

wherein the plurality of blocks of color components are stored in the planar format.

40. The method of claim 37,

wherein the block of color components is converted into the packed format, and

wherein the blocks of color component are stored in the packed format.

41. A computer-readable medium having stored thereon a set of instructions, the set of instruction, which when executed by a processor, cause the processor to perform a method comprising:

receiving a block of a color components of an image in a format as one of a packed format and a planar format;

converting the block of color components into a mixed format of the packed format and the planar format;

repeating the receiving and the converting color component for a plurality of blocks of color components;

storing the plurality of blocks of color components in the mixed format of the packed format and the planar format, such that one or more color components of the plurality of block are stored in a packed format and two or more of the color components of the plurality of block are stored in a planar format; and

repeating the receiving, the converting and the storing for each block of color components of the image.

42. The computer-readable medium of claim 41, further comprises:

using as the plurality of blocks of color components four blocks of color components; and

writing pixel data of the four blocks as a group and in a sequential manner to a frame buffer, such that prior to being burst written to the frame buffer, the pixel data is temporarily held in an entry of a write-combining (WC) buffer, thereby eliminating partial writes from the WC buffer.

43. The computer-readable medium of claim 41,

wherein the blocks of color components is converted into the planar format, and

wherein the plurality of blocks of color components are stored in the planar format.

44. The computer-readable medium of claim 41,

wherein the block of color components is converted into the packed format, and

wherein the blocks of color component are stored in the packed format.